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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/345,809	CHRISTENSEN ET AL.
	Examiner	Art Unit
	Christopher E. Lee	2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *13*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Receipt Acknowledgement

1. Receipt is acknowledged of the Amendment filed on 3rd of November 2003. Claims 1, 10, 17 and 19 have been amended; no claim has been canceled; and no claim has been newly added since the last Office Action was mailed on 30th of May 2003. Currently, claims 1-26 are pending in this application.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art [hereinafter AAPA] in view of Pentikäinen [US 6,445,905 B1].

Referring to claim 1, AAPA discloses a method of providing a backup link active schedule (See page 3, lines 5-9) for use in controlling communication (See page 2, lines 19-25) in a process control system (See page 3, line 3) having a master link active scheduler that controls communication on a databus using a link active schedule (See page 2, lines 21-26) and a backup link active scheduler that performs backup control of communication on said databus (See page 2, line 26 through page 3, line 2) communicatively coupled together via a databus (i.e., open protocol bus; See page 2, lines 7-12), and further including a controller communicatively connected to said databus (See page 1, lines 8-13 and page 1, line 24 through page 2, line 6), comprising the steps of: providing process control signals to said controller to perform process control activities (See page 1, lines 14-23); storing (i.e., downloading) a link active schedule in a master link active scheduler (i.e., master LAS; See page 3, lines 3-4) apart from said process control signals (See page 2, line 7 through page 3, line 2; i.e., wherein in fact that the synchronous and asynchronous communications (i.e., communications for process control signals) on a protocol bus being performed according to a bus schedule (i.e., link active schedule), which is commonly performed by a LAS connected to the protocol bus implies said link active schedule apart from said process control

signals), wherein said link active schedule includes a communication timing schedule for said databus (See page 2, lines 21-23; i.e., wherein in fact that a scheduling function, i.e., LAS schedule information, is required to coordinate and synchronize the interoperation of the smart field devices implies that said link active schedule includes a communication timing schedule for said databus); and storing (i.e., downloading) said link active schedule in said backup link active scheduler (i.e., backup LAS; See page 3, lines 5-9).

AAPA does not disclose the method step of automatically transmitting said link active schedule from said master link active scheduler over said databus to said backup link active scheduler upon receipt of said link active schedule in said master link active scheduler.

Pentikäinen discloses a method of preventing data inconsistency between master exchange data and backup exchange data, wherein said method comprising step of automatically transmitting a link active schedule (i.e., data; See col. 5, lines 9-18) from a master link active scheduler (e.g., slave exchange 4 of Fig. 3) over a databus (i.e., connection between slave exchange 4 and master exchange 1 in Fig. 3) to a backup link active scheduler (e.g., master exchange 1 of Fig. 3) upon receipt of said link active schedule (i.e., upon detection of said data received; See col. 5, lines 9-10) in said master link active scheduler (i.e., slave exchange 4 of Fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said method step of automatically transmitting from said master link active scheduler to said backup link active scheduler, as disclosed by Pentikäinen, in said method of providing a backup link active schedule, as disclosed by AAPA, so as to send said link active schedule (i.e., said data) from said master link active scheduler (i.e., a first slave exchange) to said backup link active scheduler (i.e., said master exchange) upon receipt of said link active schedule from a user (i.e., backup exchange), in turn, said backup link active scheduler (i.e., said master exchange) sends said received link active schedule (i.e., received said data) to all the link active schedulers (i.e., all the exchanges) with which it

has a protocol bus (i.e., data transmission connection; See Pentikäinen, col. 5, lines 12-18), for the advantage of provide said link active control (i.e., said data) consistency among said link active schedulers (i.e., exchanges; See Pentikäinen, col. 1, lines 44-46).

Referring to claims 5 and 6, AAPA discloses the step of transmitting using an open communication protocol (viz., standard communication protocol, like Fieldbus protocol), which is a Fieldbus communication protocol (See page 2, lines 7-18).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pentikäinen [US 6,445,905 B1] as applied to claims 1, 5 and 6 above, and further in view of Chrabaszcz [US 6,263,387 B1].

Referring to claim 2, AAPA, as modified by Pentikäinen, discloses all the limitations of claim 2 except that does not teach the step of storing a list of backup link active scheduler devices associated with said databus in said master link active scheduler.

Chrabaszcz discloses a system for automatically configuring a server, wherein the step of storing (i.e., detecting and keeping;) a list (i.e., a configuration database) of backup link active scheduler devices (i.e., all circuit boards) associated with a databus (i.e., on the PCI bus) in a master link active scheduler (i.e., kept by the Hot Plug software).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said storing said list, as disclosed by Chrabaszcz, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen, for the advantage of providing an automatic listing of said backup link active schedulers (i.e., circuit boards on the PCI bus) by said Hot Plug software.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pentikäinen [US 6,445,905 B1] as applied to claims 1, 5 and 6 above, and further in view of Burns et al.

[WO 98/14853; hereinafter Burns; cited by the Applicant] and Shapiro et al. [US 6,230,286 B1; hereinafter Shapiro].

Referring to claim 3, AAPA, as modified by Pentikäinen, discloses all the limitations of claim 3 except that does not teach the steps of detecting when said backup link active scheduler is unavailable for storage of said link active schedule and notifying a user that said backup link active scheduler is unavailable for storage of said link active schedule.

Burns discloses a process control network 10 (Fig. 1), the step of detecting when a backup link active scheduler (i.e., field device) is unavailable for storage of a link active schedule (See page 23, lines 20-23; i.e., wherein in fact that a field device does not properly response to pass token messages on a databus implies said field device (i.e., backup link active scheduler) is unavailable for storage of a link active schedule on said databus).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said detection, as disclosed by Burns, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen, for the advantage of providing a capability of an immediate service to take over for failed master link active scheduler thanks to maintaining said availability information of said backup link active scheduler when a failover condition occurs.

AAPA, as modified by Pentikäinen and Burns, does not disclose the step of notifying a user that said backup link active scheduler is unavailable for storage of said link active schedule.

Shapiro discloses a computer system failure reporting mechanism, wherein the step of notifying (i.e., sending a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is no longer communicating on said databus; See the rejection of the specific limitations of the claim 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said sending a report, as disclosed by Shapiro, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen and Burns, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

Referring to claim 4, AAPA, as modified by Pentikäinen, discloses all the limitations of claim 4 except that does not teach the steps of detecting a failure to store said link active schedule in at least one backup link active scheduler and notifying a user of said detected failure to store said link active schedule in at least one backup link active scheduler.

Burns discloses a process control network 10 (Fig. 1), the steps of detecting a failure to store a link active schedule in at least one backup link active scheduler (i.e., detecting when said backup link active scheduler is unavailable for storage (i.e., failure to store) of a link active schedule). Refer to page 23, lines 20-23 (i.e., wherein in fact that a field device does not properly response to pass token messages on a databus implies said field device (i.e., backup link active scheduler) is failed to store a link active schedule on said databus).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said detection, as disclosed by Burns, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen, for the advantage of providing a capability of an immediate service to take over for failed master link active scheduler thanks to maintaining said availability information of said backup link active scheduler when a failover condition occurs.

AAPA, as modified by Pentikäinen and Burns, does not disclose the step of notifying a user of said detected failure to store said link active schedule in at least one backup link active scheduler.

Shapiro discloses a computer system failure reporting mechanism, wherein the step of notifying (i.e., sending a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is unavailable for storage of said link active schedule).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said sending a report, as disclosed by Shapiro, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen and Burns, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pentikäinen [US 6,445,905 B1] as applied to claims 1, 5 and 6 above, and further in view of Burns [WO 98/14853].

Referring to claim 7, AAPA, as modified by Pentikäinen, discloses all the limitations of claim 7 except that does not teach the step of recognizing that said backup link active scheduler is no longer communicating on said databus.

Burns discloses a process control network 10 (Fig. 1), the step of recognizing that a backup link active scheduler (i.e., field device) is no longer communicating on a databus (See page 23, lines 20-23; i.e., wherein in fact that a field device does not properly response to pass token messages on a databus implies said field device (i.e., backup link active scheduler) is no longer communicating on said databus).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said recognition, as disclosed by Burns, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen, for the advantage of providing a capability of an immediate service to take over for failed master link active scheduler thanks

to maintaining said availability information of said backup link active scheduler when a failover condition occurs.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pentikäinen [US 6,445,905 B1] and Burns [WO 98/14853] as applied to claim 7 above, and further in view of Chrabaszcz [US 6,263,387 B1].

Referring to claim 8, AAPA, as modified by Pentikäinen and Burns, discloses all the limitations of claim 8 except that does not teach the step of recognizing includes said step of comparing a live list to a backup list.

Chrabaszcz discloses a system for automatically configuring a server, wherein the step of recognizing includes the step of comparing a live list (i.e., devices identified are placed in a list; See col. 10, lines 56-59) to a backup list (i.e., against a configuration database; See col. 10, line 60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said comparing, as disclosed by Chrabaszcz, in the step of said recognizing, as disclosed by AAPA, as modified by Pentikäinen and Burns, for the advantage of providing an automatic adjustment (i.e., reconfiguration) of said backup list (i.e., configuration data base; Chrabaszcz) for said backup link active schedulers (i.e., circuit boards on the PCI bus; Chrabaszcz). Refer to col. 10, lines 51-67 in Chrabaszcz.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pentikäinen [US 6,445,905 B1] and Burns [WO 98/14853] as applied to claim 7 above, and further in view of Shapiro [US 6,230,286 B1].

Referring to claim 9, AAPA, as modified by Pentikäinen and Burns, discloses all the limitations of claim 9 except that does not teach the step of notifying a user that said backup link active scheduler is no longer communicating on said databus.

Shapiro discloses a computer system failure reporting mechanism, wherein the step of notifying (i.e., sending a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is no longer communicating on said databus; See the rejection of the specific limitations of the claim 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said sending a report, as disclosed by Shapiro, in said method of providing a backup link active schedule, as disclosed by AAPA, as modified by Pentikäinen and Burns, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

9. Claims 10, 14-19, 21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns [WO 98/14853] in view of Pentikäinen [US 6,445,905 B1].

Referring to claim 10, Burns discloses a system (i.e., process control network 10 of Fig. 1) for controlling communications (See page 3, lines 20-24) on a databus (i.e., bus 34 of Fig. 1) using a link active schedule (See page 18, lines 18+) having a communication timing schedule for said databus (See page 18, lines 23-26), and further including a controller (i.e., CONTLR 14 of Fig. 1) communicatively connected to said databus (See page 8, lines 17-21), comprising: said controller providing process control signals to said databus to perform process control activities (See page 8, lines 17-21, page 10, lines 20-25; i.e., wherein in fact that each of the devices, including controllers and devices, is capable of communicating over the bus and is capable of independently performing one or more process control functions using data acquired by the devices, from the process, or from a different devices via communication signals on the bus implies said controller providing process control signals to said databus to perform process control activities); a master link active scheduler that controls communication on said databus using a link active schedule (i.e., LAS 12, 16 and 26 in Fig. 1; See page 18, lines 19-26), said

master link active scheduler having a memory (i.e., RAM 1146, ROM 1148 and 1150 NVRAM in Fig. 14) that stores said link active schedule (See page 18, lines 22-26) and a processor (i.e., microprocessor 1140 of Fig. 14); and a backup link active scheduler that performs backup control of communication on said databus (i.e., Link Master 22 of Fig. 1 as a backup LAS; See page 18, lines 26-30) in communication via said databus with said master link active scheduler (See bus 34 and LAS 12, 26, 16 and Link Master 22 in Fig. 1).

Burns does not disclose said processor programmed to automatically transmit said link active schedule over said databus upon receiving said link active schedule; and said backup link active scheduler in communication via said databus with said master link active scheduler to receive said link active schedule transmitted from said master link active scheduler.

Pentikäinen discloses a processor (i.e., processing unit P in Fig. 1) programmed to automatically transmit (See col. 4, lines 8-12) a link active schedule (i.e., data; See col. 5, lines 9-18) over a databus (i.e., connection between slave exchange 4 and master exchange 1 in Fig. 3) upon receiving said link active schedule (i.e., upon detection of said data received; See col. 5, lines 9-10); and a backup link active scheduler (e.g., master exchange 1 of Fig. 3) in communication via said databus with a master link active scheduler (e.g., slave exchange 4 of Fig. 3) to receive said link active schedule transmitted from said master link active scheduler (i.e., slave exchange 4 of Fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented said method step of automatically transmitting from said master link active scheduler to said backup link active scheduler, as disclosed by Pentikäinen, in said system, as disclosed by Burns, so as to send said link active schedule (i.e., said data) from said master link active scheduler (i.e., a first slave exchange) to said backup link active scheduler (i.e., said master exchange) upon receipt of said link active schedule from a user (i.e., backup exchange), in turn, said backup link active scheduler (i.e., said master exchange) sends said received link active schedule (i.e., received said data) to all the link

active schedulers (i.e., all the exchanges) with which it has a protocol bus (i.e., data transmission connection; See Pentikäinen, col. 5, lines 12-18), for the advantage of provide said link active control (i.e., said data) consistency among said link active schedulers (i.e., exchanges; See Pentikäinen, col. 1, lines 44-46).

Referring to claims 14 and 15, Burns discloses said master link active scheduler and said backup link active scheduler are each adapted to transmit over said databus using an open protocol (viz., standard protocol, like Fieldbus protocol), which is the Fieldbus protocol (See page 12, lines 15-17).

Referring to claim 16, Burns discloses said backup link active scheduler is a field device (i.e., Link Master 22 of Fig. 1 and See page 8, line 20).

Referring to claim 17, Burns discloses a system (i.e., process control network 10 of Fig. 1) for controlling a process (See page 1, lines 8-10), comprising: a user interface (i.e., host 12 of Fig. 1) coupled to a first databus (i.e., bus segment 34a of Fig. 1); a controller (i.e., CNTLR 14 of Fig. 1) communicatively coupled to said user interface through said first databus (See page 8, line 27 through page 9, line 5); an 1/O device (bridge 32 of Fig. 1) coupled to said controller and further coupled to a second databus (i.e., bus segment 34b of Fig. 1), said controller providing process control signals to said second databus to perform process control activities (See page 8, lines 17-21, page 10, lines 20-25; i.e., wherein in fact that each of the devices, including controllers and devices, is capable of communicating over the bus and is capable of independently performing one or more process control functions using data acquired by the devices, from the process, or from a different devices via communication signals on the bus implies said controller providing process control signals to said second databus to perform process control activities); a plurality of field devices (i.e., basic device 18 and 19, link master 16 and 22 in Fig. 1) coupled to said second databus, each of said field devices adapted to communicate with said 1/O device over said second databus (See page 10, lines 9-11); a primary scheduler (i.e., Link master (LAS) 16 of Fig. 1) coupled to said second databus and adapted to use a link active schedule to control

interoperation of said field devices (See page 18, lines 19-26); a backup scheduler (i.e., Link Master 22 of Fig. 1 as a backup LAS) coupled to said second databus and adapted to communicate with said primary scheduler and said plurality of field devices via said second databus (See Fig. 1) to perform backup control of said interoperation of said field devices (See page 18, lines 26-30); and a processor (i.e., microprocessor 1140 of Fig. 14) associated with said primary scheduler (field device controller 1102 of Fig. 14).

Burns does not disclose said processor programmed to automatically store a backup copy of said link active schedule in said backup scheduler upon receiving said link active schedule.

Pentikäinen discloses a processor (i.e., processing unit P in Fig. 1) associated with a primary scheduler (e.g., slave exchange 4 of Fig. 3) programmed to automatically store a backup copy of a link active schedule (i.e., data; See col. 5, lines 9-18) in a backup scheduler (e.g., master exchange 1 of Fig. 3) upon receiving said link active schedule (i.e., upon detection of said data received; See col. 5, lines 9-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented said method step of automatically transmitting from said master link active scheduler to said backup link active scheduler, as disclosed by Pentikäinen, in said system, as disclosed by Burns, so as to send said link active schedule (i.e., said data) from said master link active scheduler (i.e., a first slave exchange) to said backup link active scheduler (i.e., said master exchange) upon receipt of said link active schedule from a user (i.e., backup exchange), in turn, said backup link active scheduler (i.e., said master exchange) sends said received link active schedule (i.e., received said data) to all the link active schedulers (i.e., all the exchanges) with which it has a protocol bus (i.e., data transmission connection; See Pentikäinen, col. 5, lines 12-18), for the advantage of provide said link active control (i.e., said data) consistency among said link active schedulers (i.e., exchanges; See Pentikäinen, col. 1, lines 44-46).

Referring to claim 18, Burns discloses said second databus uses a Fieldbus communication protocol (See claims 16 and 19 on pages 41-42).

Referring to claim 19, Burns discloses a communication scheduling system (process control network 10 of Fig. 1) for use in a process control system (See page 1, lines 8-10) having a master link active scheduler (i.e., Link master (LAS) 16 of Fig. 1) with a processor therein (microprocessor 1140 of Fig. 14) and a backup link active scheduler (Link Master 22 of Fig. 1; i.e., backup LAS) communicatively coupled to a databus (bus segment 34b of Fig. 1; See page 10, lines 9-11), said master link active scheduler performing control of communications on said databus (See page 18, lines 19-26) and said backup link active scheduler performing backup control of communications on said databus (See page 18, lines 26-30), and further including a controller (i.e., CONTLR 14 of Fig. 1) communicatively connected to said databus (See page 8, lines 17-21) to send control signals via said databus (See page 8, lines 17-21, page 10, lines 20-25; i.e., wherein in fact that each of the devices, including controllers and devices, is capable of communicating over the bus and is capable of independently performing one or more process control functions using data acquired by the devices, from the process, or from a different devices via communication signals on the bus implies a controller communicatively connected to said databus to send control signals via said databus) comprising: a computer readable memory (RAM 1146, ROM 1148 and 1150 NVRAM in Fig. 14); and a first storing routine stored on said memory and adapted to be executed by said processor (See page 37, lines 3+) that stores a link active schedule (See page 18, lines 18+) having a communication timing schedule for said databus in said master link active scheduler (See page 18, lines 23-26).

Burns does not teach an automatic transmission routine stored on said memory and adapted to be executed by said processor that automatically transmits said received link active schedule from said master link active scheduler over said databus to said backup link active scheduler upon receipt of said link active schedule in said master link active scheduler.

Pentikäinen discloses an automatic transmission routine stored on a memory (i.e., a flow (automatic transmission routine) being executed by processing P is shown in Fig. 2) and adapted to be executed by a processor (i.e., processing unit P in Fig. 1) that automatically transmits (See col. 4, lines 8-12) a received link active schedule (i.e., data; See col. 5, lines 9-18) from a master link active scheduler (e.g., slave exchange 4 of Fig. 3) over a databus (i.e., connection between slave exchange 4 and master exchange 1 in Fig. 3) to a backup link active scheduler (e.g., master exchange 1 of Fig. 3) upon receipt of said link active schedule in said master link active scheduler (i.e., upon detection of said data received; See col. 5, lines 9-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented said method step of automatically transmitting from said master link active scheduler to said backup link active scheduler, as disclosed by Pentikäinen, in said system, as disclosed by Burns, so as to send said link active schedule (i.e., said data) from said master link active scheduler (i.e., a first slave exchange) to said backup link active scheduler (i.e., said master exchange) upon receipt of said link active schedule from a user (i.e., backup exchange), in turn, said backup link active scheduler (i.e., said master exchange) sends said received link active schedule (i.e., received said data) to all the link active schedulers (i.e., all the exchanges) with which it has a protocol bus (i.e., data transmission connection; See Pentikäinen, col. 5, lines 12-18), for the advantage of provide said link active control (i.e., said data) consistency among said link active schedulers (i.e., exchanges; See Pentikäinen, col. 1, lines 44-46).

Referring to claim 21, Burns discloses a process control network 10 (Fig. 1), a detecting routine stored on said memory and adapted to be executed by said processor that detects when said backup link active scheduler (i.e., field device) is unavailable for storage of said link active schedule (See page 23, lines 20-23; i.e., wherein in fact that a field device does not properly response to pass token messages on a

databus implies said field device (i.e., backup link active scheduler) is unavailable for storage of a link active schedule on said databus).

Referring to claim 23, Burns discloses a process control network 10 (Fig. 1), a detecting routine stored on said memory and adapted to be executed by said processor that detects a failure to store said link active schedule in said backup link active scheduler (i.e., detecting when said backup link active scheduler is unavailable for storage (i.e., failure to store) of a link active schedule). Refer to page 23, lines 20-23 (i.e., wherein in fact that a field device does not properly response to pass token messages on a databus implies said field device (i.e., backup link active scheduler) is failed to store a link active schedule on said databus).

Referring to claim 25, Burns discloses a detecting routine stored on said memory and adapted to be executed by said processor that detects when said backup link active scheduler (i.e., field device) is no longer communicating on said databus. (See page 23, lines 20-23; i.e., wherein in fact that a field device does not properly response to pass token messages on a databus implies said field device (i.e., backup link active scheduler) is no longer communicating on said databus).

10. Claims 11, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns [WO 98/14853] in view of Pentikäinen [US 6,445,905 B1] as applied to claims 10, 14-19, 21, 23 and 25 above, and further in view of Chrabaszcz [US 6,263,387 B1].

Referring to claim 11, Burns, as modified by Pentikäinen, discloses all the limitations of claim 11 except that does not teach a list of backup link active scheduler devices stored in said memory. Chrabaszcz discloses a system for automatically configuring a server, wherein the step of storing (i.e., detecting and keeping;) a list (i.e., a configuration database) of backup link active scheduler devices (i.e., all circuit boards) stored in a memory (i.e., means for keeping said list by the Hot Plug software). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said storing said list, as disclosed by Chrabaszcz, in said method of

providing a backup link active schedule, as disclosed by Burns, as modified by Pentikäinen, for the advantage of providing an automatic listing of said backup link active schedulers (i.e., circuit boards on the PCI bus) by said Hot Plug software.

Referring to claim 12, Chrabaszcz discloses said processor further programmed to send (i.e., compare) said link active schedule (i.e., detected circuit board identification) to said backup link active scheduler devices (i.e., with configured circuit boards on PCI board) in said list (i.e., in configuration database) of backup link active scheduler devices (i.e., means for checking of new circuit board on PCI bus is referring to said list of circuits boards (configuration database) for new circuit board configuration).

Referring to claim 20, Burns, as modified by Pentikäinen, discloses all the limitations of claim 20 except that does not teach said automatic transmission routine is further adapted to receive and store a list of backup link active scheduler devices and to automatically send said list of backup link active scheduler devices to said backup link active scheduler.

Chrabaszcz discloses a system for automatically configuring a server, wherein said system comprises a list (i.e., configuration database) of backup link active scheduler devices (i.e., configured circuit boards on a PCI bus; See col. 10, lines 55-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further programmed said processor including said list (i.e., configuration database), as disclosed by Chrabaszcz, in said link active schedule of said communication scheduling system, as disclosed by Burns, as modified by Pentikäinen, for the advantage of providing an automatic listing of said backup link active schedulers (i.e., circuit boards on the PCI bus) by said Hot Plug software.

Burns, as modified by Pentikäinen and Chrabaszcz, discloses said automatic transmission routine is further adapted to receive and store said list of backup link active scheduler devices and to automatically send said list of backup link active scheduler devices to said backup link active scheduler.

11. Claims 13, 22, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns [WO 98/14853] in view of Pentikäinen [US 6,445,905 B1] as applied to claims 10, 14-19, 21, 23 and 25 above, and further in view of Shapiro [US 6,230,286 B1].

Referring to claim 13, Burns discloses said processor is further programmed to detect when said backup link active scheduler (i.e., field device) is unavailable for storage of said link active schedule (See page 23, lines 20-23; i.e., wherein in fact that a field device does not properly response to pass token messages on a databus implies said field device (i.e., backup link active scheduler) is unavailable for storage of a link active schedule on said databus).

Burns, as modified by Pentikäinen, discloses all the limitations of claim 13 except that does not teach said processor is further programmed to notify a user that said backup link active scheduler is unavailable for storage of said link active schedule.

Shapiro discloses a computer system failure reporting mechanism, wherein a processor (CPU in Fig. 1) is programmed to notify (i.e., send a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is no longer communicating on said databus).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have programmed said sending a report, as disclosed by Shapiro, in said processor, as disclosed by Burns, as modified by Pentikäinen, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

Referring to claim 22, Burns, as modified by Pentikäinen, discloses all the limitations of claim 22 except that does not teach a notifying routine stored on said memory and adapted to be executed by said processor that notifies a user when said backup link active scheduler is unavailable for storage of said link active schedule.

Shapiro discloses a computer system failure reporting mechanism, wherein a notifying routine stored on said memory and adapted to be executed by said processor that notifies (i.e., send a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is unavailable for storage of a link active schedule on said databus; See the rejection of the specific limitations of the claim 21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said sending a report, as disclosed by Shapiro, in said method of providing a backup link active schedule, as disclosed by Burns, as modified by Pentikäinen, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

Referring to claim 24, Burns, as modified by Pentikäinen, discloses all the limitations of claim 24 except that does not teach a notifying routine stored on said memory and adapted to be executed by said processor that notifies a user of said failure to store said link active schedule in said backup link active scheduler.

Shapiro discloses a computer system failure reporting mechanism, wherein a notifying routine stored on said memory and adapted to be executed by said processor that notifies (i.e., send a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is failed to store said link active schedule in said backup link active scheduler; See the rejection of the specific limitations of the claim 23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the step of said sending a report, as disclosed by Shapiro, in said method of providing a backup link active schedule, as disclosed by Burns, as modified by Pentikäinen, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able

to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

Referring to claim 26, Burns, as modified by Pentikäinen, discloses all the limitations of claim 26 except that does not teach a notifying routine stored on said memory and adapted to be executed by said processor that notifies a user that said backup link active scheduler is no longer communicating on said databus.

Shapiro discloses a computer system failure reporting mechanism, wherein a notifying routine stored on a memory and adapted to be executed by a processor that notifies a user (i.e., send a report; See abstract) a user (i.e., a user at a remote site) a failure (i.e., said backup link active scheduler is no longer communicating on said databus; See the rejection of the specific limitations of the claim 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said notifying routine, as disclosed by Shapiro, in said communication scheduling system, as disclosed by Burns, as modified by Pentikäinen, for the advantage of providing a flexibility of said user notification with a notifying option, like said user is able to specify with some particularity under what circumstances a report should be generated (See col. 2, lines 40-43; Shapiro).

Response to Arguments

12. Applicants' arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection. By the way, the Examiner believes that the Applicants misinterpret the claim rejection on the prior Office Action mailed on 30th of May 2003. The Applicants essentially argue that Pentikäinen doesn't teach the data sent between the master exchange and the backup exchange of Pentikäinen has nothing to do with the operation of the backup device or of enabling communications on a bus should the master exchange fail. However, the combination of the references AAPA and Burns suggests the system and method sends the link active schedule to assure that the backup LAS is able to operate properly to enable communications on the bus should the master LAS fail (See AAPA, page 2,

line 26 through page 3, line 2 and Burns, page 18, lines 26-30). Furthermore, the Examiner recognizes that it has been held that a prior art reference must either be in the field of the Applicants' endeavor or, if not, then be reasonably pertinent to the particular problem with which the Applicants were concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, in contrary to the Applicants' statement, the AAPA, Burns, and Pentikäinen are analogous arts of networked communication (e.g., communications in a process control network, communications in a data telecommunication system, etc.). Therefore, the combination of the references AAPA (or Burns) and Pentikäinen with rationale for appropriate combination of them obviously suggests the claimed invention (See paragraph 3 in the instant Office Action as an example, claims rejection under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pentikäinen). All the rejections under *35 USC §103(a)* in the prior and the instant Office Action established a *prima facie* case of obviousness meeting the three basic criteria of the M.P.E.P. 2143.03 (8th ed. 2001). The Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Also, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, AAPA or Burns teaches and/or suggests a bus scheduler system associated with a process control system. And, Pentikäinen teaches automatically transmitting a data (i.e.,. link active schedule) from a slave exchange (i.e., master link active scheduler) over a connection (i.e., databus) to a master exchange (i.e., backup link active scheduler) upon receipt of said data (i.e., upon

detection of said link active schedule received) in said slave exchange (i.e., master link active scheduler). Thus, the Applicants' argument on this point is not persuasive.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Lee whose telephone number is 703-305-5950. The examiner can normally be reached on 9:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Christopher E. Lee
Examiner
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cel/

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